REMARKS

By this amendment, claims 1-3, 5-12, and 22 are amended. Claim 4 is canceled without prejudice or disclaimer. Claims 1-3 and 5-32 are pending for examination.

Objections to the Specification

The specification was objected because of certain specified informalities on page 11, line 26, and page 12, line 25. The specified lines have been amended as requested in the Office Action. Applicant respectfully submits that these amendments obviate the specified informalities in the specification.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-32 were rejected under as being anticipated by Reihs, et. al. WO 158688, an English translation of which is said to appear as U.S. Patent Application Publication No. 2003/0108449 (the '449 publication). Applicant assumes the '449 publication is a true and accurate translation of the cited reference, and the citations in the following remarks refer to the '449 publication.

In the Office Action, it was asserted that the limitations of independent claims 1, 12, and 22, were given little or no patentable weight because there is no positive recitation set forth that the claimed component has to be used in a fuel cell application. In response, claims 1 and 6 have been amended to claim a fuel cell stack apparatus with a specified structure, claim 12 has been amended to claim a method of making a bi-polar plate for a fuel cell with more specifically described structure, and claim 22 has been amended to claim a fuel cell stack apparatus with at least one component selected from a group of specified fuel cell components.

In view of the above amendments, Applicant respectfully submits that Reihs, et. al. does not anticipate or render obvious the claimed invention. In the first instance, the microtitre plate disclosed in Reihs et. al. is neither a fuel cell nor a component capable of use in a fuel cell. Further, Reihs et. al. contains no teaching or suggestion whatsoever of any application to fuel cells. Hence, since Reihs, et. al. does not teach or suggest the limitations of the claims relating specifically to fuel cells, it cannot anticipate or render the claims obvious. In consequence, Applicant respectfully requests that the claim rejections be withdrawn on this basis alone.

Applicant further notes that Reihs, et. al. was said to teach that a surface area is altered to repel liquid with a plurality of asperities having all of the various structural attributes claimed in the present application. Applicant respectfully submits that this characterization in the Office Action of the teachings of Reihs, et. al. is in error.

In the first instance, the abstract and paragraph 0001 are cited for disclosing liquid repelling asperities having a cross-sectional dimension. These passages, however, describe hydrophilic (that is liquid attracting) areas dispersed on a hydrophobic surface. These areas are not a part of the hydrophobic surface at all, and thus cannot be considered to correspond to the claimed "asperities" that are a part of the claimed surface.

Paragraph 0023 is cited for disclosure of the cross-sectional dimension of the claimed asperities. The disclosure of Reihs, et. al., however, does not clearly indicate that the "$Ni(OH)_2$ particles" referenced therein form any sort of surface asperities on the hydrophobic surface. In fact, the previous paragraph (0022) indicates that the ultraphobic surface is coated with the particles and then "possibly" coated with an adhesion promoter and then provided with

a "hydrophobic coating compound." These additional "coatings" that are applied over the particles are of unspecified thickness, making it unclear whether the particles even form surface asperities at all, let alone asperities with the claimed structural attributes and relationship.

Paragraph 0016 is cited for disclosure of the ratio of the cross-sectional dimension of asperities to the spacing dimension. Paragraph 0016, however, refers to the area of hydrophilic areas on the microtitre plate disclosed in Reihs, et. al., not to any aspect of the ultraphobic surface of the plate.

Paragraph 0009 is cited for disclosure of the rise angle of asperities. What is referred to in paragraph 0009 of Reihs, et. al., however, is generally the range of contact angles of a liquid droplet on an ultrahydrophobic surface, not the rise angle of any asperities on the particular plate described. Please note that in the vernacular, contact angle is a different parameter than the rise angle of the asperities. See application pages 9-15 for discussion.

Paragraph 0025 is cited for disclosure of asperities having a uniform height. This paragraph, however, refers to a layer of "wolfram carbide", preferably having a layer thickness from 10 to 500 microns. There is no indication whether this layer is rough or smooth or has a uniform thickness of some value in the range or is of variable thickness within the range. Roughness of the layer is simply not discussed.

Paragraphs 0012, 0014, 0017, 0019, and 0054 are cited for disclosure of uniformly shaped, uniformly patterned and uniformly spaced asperities. Again, paragraphs 0012, 0014, 0017, and 0054 do not refer at all to asperities forming a part of an ultraphobic surface, but rather to hydrophilic areas on an ultraphobic surface. Paragraph 0019 purports to describe an ultraphobic surface having a topography that apparently includes periodic surface

discontinuities that are capable of mathematical characterization with the stated function. Applicant respectfully submits, however, that this one paragraph description does not enable one of skill in the art to make and use an ultraphobic surface having such surface discontinuities. Hence, even if a particular ultraphobic surface structure were to be capable of characterization with some variant of the function stated therein, this description alone would not anticipate or render obvious claims to that ultraphobic surface structure.

Paragraph 0022 is cited as teaching that asperities on an ultraphobic surface may be projections. As previously pointed out, however, paragraph 0022 says only that the surface structure includes particles of nickel hydroxide, not that such particles necessarily project from the surface.

Paragraph 0003 is cited as teaching that asperities on an ultraphobic surface may be cavities. This paragraph, however, states only that prior art microtitre plates have small indentations at regular intervals. Further, this paragraph is cited as teaching that asperities on ultraphobic surfaces may be formed by extrusion. Again, however, the paragraph merely discloses that prior art microtitre plates were often formed by extrusion. In short, there is no teaching whatsoever in paragraph 0003 relevant to ultraphobic surfaces.

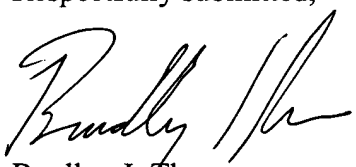
Paragraph 0015 is cited as teaching that asperities forming a part of an ultraphobic surface may be a geometric shape. Once again, however, this paragraph refers to hydrophilic areas dispersed within the ultraphobic surface of the described microtitre plate, not to any aspect of the ultraphobic surface.

Based on the foregoing, Applicant respectfully submits that Reihs, et al. does not teach that a surface area is altered to repel liquid with a plurality of asperities having all of the various structural attributes claimed in the present application as stated in the Office Action.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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